

Letter of intent (LOI)

Interested parties should submit a Letter of Intent (LOI) on or before February 28, 2020 for each individual proposal. Letter of intent should include applicant contact information and seven questions about proposed study. More details about SAM study selection process, eligibility and funding availability can be found in SAM REF guidelines in SAM Effectiveness webpage.

Email address *

anand.jayakaran@wsu.edu

Applicant contact information

Applicant Full Name *

Anand Jayakaran

Organization *

Washington Stormwater Center

Phone number *

2534454523

Proposed Study Information

1. Proposed Study Title *

Replacement and lifecycle costs of permeable pavements compared with conventional pavements

2. Which topic(s) from the SWG's priority list do you propose to address? *

The proposed study topic should be in the SWG's priority list

3. and 3.1 {Quantify the benefit of replacing traditional pavement with permeable pavement.} { What are the lifecycle costs of permeable pavement?}

3. Select type of project being proposed *

- Survey
- Literature Review & Synthesis
- Environmental Sampling Study
- Other

4. Short Description of the Proposed Study *

250 word limit: describe how results will assess effectiveness and advance regional understanding and permittees' implementation of specific stormwater management approaches

Permeable pavements could play a critical role in effecting stormwater mitigation if used widely. Biogeochemical and toxicological work suggest that permeable pavements can mitigate both the quantity and quality of stormwater. The biggest barrier to their adoption is the perceived high costs, and complexity of implementation. We propose to collect construction costs for new and retrofit permeable pavements, collect maintenance costs, and ascribe ecological value by accounting for sediments and total phosphorous that can be cleaned by permeable pavements based on published data and studies. The study will have the following objectives:

1. Perform a comparative cost-benefit analysis on permeable pavements and conventional pavement. Comparisons will be based on installation and life-cycle costs for several permeable and conventional pavement projects in the region. Data will be corrected for differences in materials and labor costs with year of construction and times of maintenance.
2. Use a continuous simulation model (e. g. Western Washington Hydrology Model) to compare relative treatment volumes and ascribe treatment value based on some assumed TSS and TP loading rates. Treatment value would be derived using economic valuation techniques to ascribe dollar values to pollutant treatment efficiencies.

5. What type information will be collected or analyzed for this proposed study? *

If existing permittees' data are needed, specify the type, and the expected timing of a request for existing information from Permittees

- We will ask permittees for installation and maintenance costs for permeable and conventional pavement projects from the region
- We will ask permittees for traffic count data where available.
- We will use published data and studies to assume TSS and TP removal rates by permeable pavements. These removal rates will be ascribed dollar values using available published studies.

6. What are the anticipated measurable outcomes and key deliverables that will be produced by the proposed study, and how will they be used by Permittees and the Washington State Department of Ecology? *

Measurable outcomes will be a white paper that outlines the cost benefit analysis of replacing conventional pavements with permeable pavements. The white paper will include life cycle and replacement costs for both kinds of pavements. The analysis will also include both economic and ecological costs associated with the replacement of conventional pavements with their permeable equivalents.

7. Permittees or agencies you are proposing to coordinate with (provide staff names and contact information, if known) *

Enter "NA" if not applicable.

Washington State Department of Ecology, Cities of Tacoma, and Puyallup

This content is neither created nor endorsed by Google.

